DEQ Nutrient Work Group
21st Meeting Summary
July 9, 2013

Introductions
A list of the members of the Nutrient Work Group (NWG) and others in attendance or participating in the meeting via telephone is attached below as Appendix 1.

Agenda
The meeting participants reviewed and approved the following agenda items.
- Review of the May 20, 2013 Meeting Summary
- Implications of Nutrient Impairment Assessment Methodology
- Report from the Nondegradation Subcommittee Meeting
- Staged Reduction of Nutrients for Non-lagoon Facilities with less than 1 Million Gallons Per Day Discharge
- Details Pertaining to the Rule Package
- Next Steps
- Public Comment
- Next Meeting

Review of the May 20, 2013 Meeting Summary
NWG members present at this meeting had no comments on the May 20, 2013 meeting summary.

Implications of Nutrient Impairment Assessment Methodology
Brian Sugden, the NWG's forestry sector representative, discussed this topic using a PowerPoint presentation entitled "West Fork Ashby Creek Nutrient Impairment Discussion." This presentation is available on the NWG web site at the following address.

http://deq.mt.gov/wqinfo/nutrientworkgroup/AgendasMeetingsPresentations.mcpx

As a forest landowner, Plum Creek is interested in the levels and attainability of the proposed nutrient criteria not for one stream, but hundreds of streams. Mr. Sugden illustrated his company's concern by focusing on the West Fork of Ashby Creek, a stream on the 303(d) List of Impaired Waters which was addressed in the recent *Lower Blackfoot Nutrients TMDLs and Framework Water Quality Improvement Plan*. Land uses in the drainage include grazing and forest management, including forest roads. Plum Creek fenced the creek in 2002. In 2003, about 25% of the stream bank was covered with a vegetative canopy. By 2011 the percent of canopy had increased to over 85%. The stream bankfull width is three feet and the water temperature maximum is 14° C. Phosphorus concentrations in the West Fork exceed the proposed nutrient criterion by 15-25%. As indicated by the percent canopy, bankfull width and temperature, no adverse biological impact is evident in spite of exceeding the nutrient criteria for phosphorus. DEQ has had an internal debate about possible actions in response to the criterion exceedance, which might include grazing and forest management restrictions. Mr. Sugden's conclusions were as follows:

- Significant variability in natural environments exist between nutrient concentration and instream response variables;
- Streams should not be listed for nutrients when there is no measured impairment of a beneficial use;
- Development of site-specific standards is not workable;
- Before nutrient criteria are adopted, DEQ should rework nutrient assessment method so that streams that are not impaired for nutrients are not listed. This change in method needs to be approved by EPA before nutrient criteria are adopted by the state.

Comment by Mark Bostrom - EPA approves outcomes not the assessment methodology. Long-standing policy constrains EPA actions.

Comment by Brian Sugden - I like the assessment methodology because it is transparent. Because nutrients are generally not toxic, there is not a bright line identifying when action is necessary.

Question - What is the impact of the nutrient criteria on forestry in the West Fork?
Answer - Phosphorus is generally attached to sediment, so best management practices (BMPs) related to sediment reduction apply. BMPs related to grazing and forest roads are relevant. Forestry is regulated via stream side management zones. Plum Creek is concerned about uncertainty regarding possible DEQ requirements for the West Fork. We lease land for grazing, and may have to curtail these leases.

Comment by Mike Suplee - There is a gray area for a limited number of streams. About 12% of reference streams in western Montana have phosphorus concentrations higher than those in the West Fork of Ashby Creek.

Comment - My understanding is that site specific nutrient standards are common in Colorado and Utah.
Response by Mike Suplee - A site specific standard requires a use attainability analysis (UAA) to demonstrate that the criteria cannot be met in the drainage.
Response by George Mathieus - While a UAA may be complex, we do not believe that a site specific standard is unworkable. We have developed a study design that could be used to determine if site specific nutrient criteria are appropriate for the East Fork of the Gallatin River. This study design was developed in response to Bozeman's contention that the stream might be able to handle higher nutrient criteria than the state is recommending and still support all uses. The study design can be found in the Guidance Document included in the draft rule package on the NWG site at http://deq.mt.gov/wqinfo/NutrientWorkGroup/default.mcpx. See Appendix A of the document shown as "Substantial and Widespread Economic Analysis for Individual Nutrient Standards Variances AND Guidelines for Determining an Individual Variance Based on Water Quality Modeling (version 7.3)".

Comment - I have been told that streams are not included on the 303(d) list just because of nutrients. Obtaining site specific standards is both time consuming and expensive and beyond the capability of individual landowners. The TMDL assessment methodology should be reviewed to ensure a connection to biological impacts.

Response by Mark Bostrom - A lot of time and resources would be required to dial in a number for the West Fork of Ashby Creek. The issues relate to more than nutrients. Water temperature and metals are also factors. DEQ's assessment methodology allows judgment. Florida adopted an assessment methodology as a rule. We do not want to go down that path.

Comment - DEQ wants flexibility; landowners want predictability.
Response by George Mathieus - Cases like the West Fork of Ashby Creek are few and far between. DEQ's assessment methodology has been thoroughly vetted. We may be able to put more certainty in the methodology, but we do not see this as an issue for the NWG or a reason to hold up adoption of numeric nutrient criteria.

Comment - Criteria should be related to a problem. If nutrient discharges do not result in biological impacts on the receiving water, then it is not clear why meeting criteria should be require increased nutrient treatment levels.
Response by Mike Suplee - Some scenarios in the level #2 of the assessment methodology address apparent conflicts in which criteria are not met but biological impairment does not occur. There is room for tightening up these gray zone scenarios. DEQ has an internal committee consisting of monitoring and assessment staff, supervisors, and TMDL staff which looks at these gray zone cases.

Question - What caused the conditions to tip so that a stream would be considered impaired?
Answer by Mike Suplee - I am not sure, but I will discuss this with the TMDL staff.

Question - Does the internal DEQ committee document its decisions?
Answer - Yes.

Comment by Mark Bostrom - We have looked at the West Fork of Ashby Creek. The ownership in the drainage is checker boarded. In some areas off-site watering and other BMPs are implemented; in other areas they are not.

Question - Could a trigger be used to initiate a site specific standard?
Answer - If the biology looks good, then no additional treatment-related or BMP actions may be needed. If not, then development of site specific criteria may be indicated.

Question - Will you bring back the tightened assessment methodology to this group?
Answer - Yes.

Report from the Nondegradation Subcommittee Meeting

Mike Suplee reviewed the June 24, 2013 meeting of the NWG Nondegradation Subcommittee using the meeting agenda found on the NWG web page at the following web address.
http://www.deq.mt.gov/wqinfo/NutrientWorkGroup/agendasMinutes/2013/Nondeg%20subcommittee/6_24_13NondegAgenda.pdf
Fifteen people attended the meeting and Dave Moon with EPA Region 8 called into it.
The Subcommittee discussed nondegradation and two examples of types of discharges, a new mine located in a smaller headwater stream and a municipal treatment plant.

New Mine - The meeting reviewed a spread sheet with end of mixing zone calculations for total nitrogen for a new mine discharging to a small headwaters stream. Application of a blasting BMP is calculated to result in a discharge of 40-50 milligrams per liter (mg/l) of nitrogen without additional treatment. The Stillwater mine with mechanical treatment achieves 4-10 mg/l nitrogen. Meeting participants requested that the authorization to degrade methodology be made more user-friendly. They indicated that new mines discharging to small headwaters streams would not be able to meet 0.3 mg/l total nitrogen. As discussed at the May 29, 2013 NWG meeting, a temporary change to stream use classification may be appropriate for Rosgen type A and B streams which have high gradients and aerate naturally. This change would require a decision by the Board of Environmental Review. Meeting participants had a mixed reaction the usefulness of this approach. DEQ does not see a magic bullet that will resolve nondegradation issues. It has identified and the meeting participants discussed a number of tools for addressing it including engineering practices, BMPs, and temporary change of use classifications.

Question - At the meeting, we asked for examples of when use of the various tools would not work. Has DEQ been provided with examples?
Answer - We are discussing this with the Mining Association.

Comment by Doug Parker - The change from a toxic to harmful perspective is a useful tool as is streamlining the authorization to degrade process and the temporary use classification change. The Butte Highland Mine would be happy to accommodate a site visit with DEQ to discuss nondegradation. The Butte Highland and Drumlummon mine examples indicating that nondegradation may still be problematic. All of the mining companies are not yet at the table.
Response by Bob Habeck - DEQ is willing to discuss these issues with the mining companies.

Municipal Treatment Plant - Small municipal systems are concerned that DEQ does not permit change of point of discharges consistently. In some instances, a proposed change of point-of-discharge requires nondegradation review even if the change would lessen water quality impacts; in others it does not.

Question - Will DEQ clarify regulation of changes of the point of discharges?
Answer - We are working on it.

Question - Does the existing nondegradation rule limit change up to 40% of the criteria?
Answer - The draft rule allows degradation up to 49% of the criteria in 10% increments.

Staged Reduction of Nutrients for Non-lagoon Facilities with less than 1 Million Gallons per Day Discharge

Shari Johnson and David Mumford summarized their discussions with League of City and Town members about a potential staged reduction of nutrient limits in the first and second permit cycles for municipal treatment plants discharging less than one million gallons per day (MGD). A primary concern is that municipalities must make financing decisions for twenty years rather than a 5-year permit cycle. The League does not yet have a proposal for mechanical treatment systems discharging less that 1 MGD. The responses of municipalities in the less than 1 MGD category varied:

- Some are unaware that the process of developing numeric nutrient standards is underway;

- Some have completed an upgrade of their treatment system and can meet the proposed criteria;
- Some have completed a treatment system upgrade and could not meet the proposed criteria;
- Some have the staff capability to get through the variance process;
- Some are unsure whether to pursue a general or individual variance.

It would be useful to know how many communities would qualify for an economic variance.

The reason for having categories based on more or less than 1 MGD discharge is economic rather than technical. Smaller communities with smaller treatment plants may have more difficulty paying for treatment upgrades.

Also, some of the small treatment plant operators are confused about mass loading versus concentrations. They are uncertain if as the communities grow sufficient loading would be available to meet concentration requirements. Educational outreach is needed about this topic.

Comment by George Mathieus - DEQ did not pitch the 1 MGD category break to the legislature because of treatment technology. We did so because of economics.

Question - When you were visiting with the smaller communities, did you discuss optimization of existing treatment plant operations?
Answer - No. Representatives of the League of Cities and Towns met this morning with the DEQ Director. We talked about the need for discussion of BMPs for system operation. Some communities have only one person running their treatment system. Some communities have not been following the development of nutrient standards and some believe that they will be unable to meet the proposed criteria. Communities need information about whether they would qualify for a variance.

Question - Does DEQ have the data to identify which communities would qualify for a variance?
Answer by Mike Suplee - We can update the information that Jeff Blend developed when we discussed individual variances to develop a list of communities that would qualify for an individual variance.

Question - How much additional time would you need to develop a proposal for the less than 1 MGD treatment plants?
Answer - We may have a proposal in a month or so.

Comment - The Montana Rural Water Systems can help with communications with small communities.

Comment - Discussion is needed with private discharges in the less than 1 MGD categories as well as with municipal systems.
Response by Mike Suplee - I would focus on private dischargers in the WERF level 1 category.

Details Pertaining to the Rule Package

Limits of Technology - Mike Suplee stated that DEQ is considering whether to include in rule a definition of the limits of technology. The draft rule currently includes the following language:

> Section 17.30.602 DEFINITIONS
> (16) "Limits of technology" means wastewater treatment processes for the removal of nitrogen and phosphorus compounds from wastewater that can consistently achieve a concentration of 70 micrograms of total phosphorus per liter and 4,000 micrograms of total nitrogen per liter.

Tina Laidlaw stated that if a definition is included in the rule, then EPA must review and take action on it. This can be avoided if the limits of technology definition is included in a guidance document rather than the rule itself.

Comment - The key issue is consistency, i.e., consistently achieve a concentration.... "Consistently" should remain in the rule but the numbers should be in the guidance document.

No participant in the meeting disagreed with putting the limits of technology numbers in a guidance/policy document rather than the rule.

Non-Severability Clause - Mike Suplee stated that DEQ agrees with the request by the Montana Petroleum Association to include a non-severability clause in the rules.

Question - Is John North drafting a non-severability clause?
Answer - Yes, based on past experience in other rules.

Board of Environment Briefing - George Mathieus stated that because the Board of Environmental Review has four new members, he plans to brief it at its July 26 meeting about the activities of the NWG.

Question - Could others join in the briefing?
Answer - Yes.

Chlorophyll α Reference in Standards - Table 12A-1 of the draft of Circular DEQ12 sets forth the base numeric nutrient standards for wadeable streams in different Montana ecoregions. Mike Suplee asked for feedback on whether or not the last column of the table which is labeled "Related Assessment Information" should be included in the standards. He noted that the standards for the Clark Fork River have included specifications for chlorophyll α. Discharge permits in the Clark Fork focus on nitrogen and phosphorus. Chlorophyll is assessed by different staff. DEQ's view is that the biological indicators should be included in the standard rather than just in the assessment methodology.

Tina Laidlaw stated that EPA must review and act upon rules, but not the assessment methodology. If the biological indicator is pulled from the rule and put into the assessment methodology, then EPA may give more weight to the numeric nutrient criteria.

Comment - I am concerned that if the algae numbers are pulled out of Table 12A-1, then more weight will be given to nitrogen and phosphorus criteria. I understand that some states are exploring aggregate criteria involving nitrogen, phosphorus and other factors.

Question - What does aggregate mean?
Answer by Tina Laidlaw - It would mean a decision matrix similar to Table 12A-1.

Comment - Adopting the biological indicators in the rule may result in less flexibility.
Response by Mike Suplee - What is more likely to change is the total nitrogen and total phosphorus requirements in a specific stream reach. Revising the criteria would require a public involvement process.

Question - Are there situations when variations in chlorophyll α do not track total nitrogen and phosphorus?
Answer by Mike Suplee - In western Montana, we have not seen 125 mg/l concentrations of chlorophyll α in reference sites. The reference data concentrations are all in the 0-70 mg/l range with a median of around 20 mg/l. We have a pretty solid understanding of harm-to-use when it comes to western Montana stream algae levels; the noise level is more in the amount of nutrients that result in a given level of algae.

Question - Do you see high levels of chlorophyll α with low levels of nitrogen and phosphorus?
Answer - Yes, because the algae take up the nitrogen and phosphorus; however, the nitrogen and phosphorus are later recycled in time and/or space.

Question - Does DEQ develop a TMDL for chlorophyll α?
Answer - No.

Question - Is DEQ interested in adopting the aggregate/matrix approach in the standard?
Answer - We are still considering this. We are not sure how it would work in practice.

Comment by Tina Laidlaw - Florida is pursuing a novel approach involving some aspects of aggregate criteria.

Question - What would be the motivation for doing so?
Answer by Tina Laidlaw - Nutrients are not toxic. In a specific stream reach, there may not be a biological impact but downstream uses must still be protected. Florida is considering a suite of indices similar to the DEQ matrix in Table 12A-1.

Question - Would including the aggregate/matrix approach in the standard require more monitoring?
Answer by Mike Suplee - No, as the eutrophication decision we have been using since 2010 already ramped up monitoring requirements.

Comment - Will you put this topic on the next meeting agenda so the group can revisit it?
Answer - Yes.

Public Comment

Question - At a meeting on the Flathead TMDL, I thought that I heard that the 319 grant program is unfunded. Is this correct?
Answer by Mark Bostrom - No. The program is funded but includes new guidelines. Fifty percent of the funds will now be used for the state allotment program and 50% will be used for projects. Less funding will be available for education, outreach, and monitoring. Projects will be favored that cooperate with the Natural Resources Conservation Service Environmental Quality Incentives Program (EQIP).

Question - So similar amounts of money will be available, but there will be an increased focus on projects?
Answer - Yes.

Next Steps

As a result of this meeting, three next steps were identified:

- DEQ will bring to the NWG at a future meeting tightened assessment methodology that address situations when streams exceed the nitrogen and phosphorus criteria without resulting in a biological impact.
- Representatives of the League of Cities and Towns will bring to the NWG a proposal for staged reduction of nutrient limits in the first and second permit cycles for municipal treatment plants discharging less than one million gallons per day (MGD).
- At its next meeting, the NWG will revisit including a chlorophyll α reference in nutrient standards.

Next Meeting

The next meeting of the NWG is scheduled for Thursday, September 5, 2013 from 1:00-5:00 p.m. in room 111 of the Metcalf Building at 1520 E. Sixth Ave in Helena.

Appendix 1
NWG Attendance List
July 9, 2013

Members

Mark Lambert	Treasure State Resource Industry Association
Kate Miller	Montana Department of Commerce
Chris Brick	Clark Fork Coalition
Shari Johnson	City of Polson/League of Cities and Towns
John Rundquist	City of Helena
Brian Sugden	Plum Creek
John Wilson	City of Whitefish
Scott Murphey	Morrison Maierle
Jeff Tiberi	Montana Association of Conservation Districts
Brian Sugden	Plum Creek (via telephone)
John Youngberg	Montana Farm Bureau
Tom Hopgood	Montana Mining Association

Alternate Members

Graig Pozega	Great West Engineering (alternate for Dave Aune)
Doug Parker	Hydrometrics (alternate for Tom Hopgood) (via telephone)
Bill Mercer	Holland & Hart (alternate for Dave Galt)
Alan Stine	Olympus Technical Services (alternate for Michael J. Perrodin)

Non-Voting Members

Dr. Mike Suplee	DEQ, Water Quality Standards Section, Water Quality Specialist
George Mathieus	DEQ Planning, Prevention and Assistance Division Administrator
Dr. Jeff Blend	DEQ Economist

Other Meeting Participants

Susan Elwing	Browning, Kaleczyc, Berry & Hoven
Alec Hansen	Montana League of Cities and Towns
Gary Swanson	Robert Peccia and Associates
Jim Reardon	City of Great Falls
Bob Habeck	DEQ, Water Protection Bureau Chief
Mike Jacobson	City of Great Falls
Abigail St. Lawrence	Montana Association of Realtors
Starr Sullivan	City of Missoula
John North	DEQ Attorney
Todd Teagarden	DEQ, Technical and Financial Services Bureau Chief
Kristi Kline	Montana Rural Water Systems, Inc.
Matt Clifford	Clark Fork Coalition
Carson Coate	EPA
Amy Fisher	Montana Association of Realtors
Tina Laidlaw	EPA
Eric Urban	DEQ, Water Quality Standards

Mark Bostrom	DEQ, Water Planning Bureau Chief
Julie DalSaglio	EPA
Susie Turner	City of Kalispell
Rebecca Bodine	City of Kalispell
Amanda McInnis	HDR/Montana League of Cities and Towns
David Mumford	City of Billings

NWG Facilitator

Gerald Mueller	Consensus Associates